ABSTRACT OF THE DISCLOSURE

A system for inspecting specimens such as semiconductor wafers is provided. The system provides scanning of dual-sided specimens using a diffraction grating that widens and passes nth order (n>0) wave fronts to the specimen surface and a reflective surface for each channel of the light beam. Two channels and two reflective surfaces are preferably employed, and the wavefronts are combined using a second diffraction grating and passed to a camera system having a desired aspect ratio. The system preferably comprises a damping arrangement which filters unwanted acoustic and seismic vibration, including an optics arrangement which scans a first portion of the specimen and a translation or rotation arrangement for translating or rotating the specimen to a position where the optics arrangement can scan the remaining portion(s) of the specimen. The system further includes means for stitching scans together, providing for smaller and less expensive optical elements.